THE FARMERS' CABINET

DEVOTED TO AGRICULTURE, HORTICULTURE, AND RURAL ECONOMY.

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The Importance of Agriculture.

BY AGRICOLA.

The want of a due estimation of the pursuits of Agriculture, is, in many countries, a grand impediment to its progress. Where the cultivation of the soil is regarded with contempt, or as beneath the attention of men of standing and education, it will he entrusted to the management of persons of narrow capitals and still narrower minds. Such prejudices operate in various places. In almost every part of the United States they are fortunately rapidly dissipating, and agricultural pursuits are viewed, as they should be, as the basis of our strength and prosperity, and therefore, worthy the attention of the wise and good. Many of our best citizens, who were distinguished in the field and in the cabinet, are now to be found on their farms, devoting their time and attention to the occupations of husbandry, as the surest means of gaining an honorable subsistence, and of doing good to their country, by thus encouraging and patronizing this first of arts.

An absurd idea, however, yet too generally prevails, that young men, and many of those who have fine landed estates, must of necessity study and pursue some public profession, the pursuits of agriculture being too low and mean to engage their talents and attention.

Agriculture, when skilfully pursued, is calculated to call into action every noble and improved faculty of the mind, and is capable of being aided by the most interesting branches of the sciences; and in the late improvements which it has undergone, it has been shown that some of its most important principles are derived from, and may be illustrated by chemical doctrines. The objection therefore, that young men would have no employment for their talents and learning, were they to engage in the pursuits of agriculture, is entirely groundless.

I consider the insensibility to the magnitude of the subject, to be the greatest obstacle in the way of advancement, which agriculture has to encounter. The first preparatory step towards its improvement, is to satisfy the minds, not only of farmers, but of the community at large, that it is an object of primary importance; and not attainable in perfection by mere farmers. If this be not accomplished, efforts to introduce any thing like system, or principle, will be arduous indeed.

A *farmer* should be considered, by *himself*, as well as by all other members of the community, as one placed in a situation to perform the most beneficial services to the public, by exercising a calling in which all other citizens are peculiarly interested. He may be, personally, no better or worse than others; but the art in which he is engaged is the most essential, of all others, to the general welfare; an art which should be encouraged and supported by all classes of citizens. Agriculture, having been not only the first of *Arts*, in priority of time, but the first in the estimation of the wisest and greatest men in every age, should ever be deemed the first object, both of public and private attention. Power, especially that delegated by the people, should extend its arm, and open its hand, for its aid and protection. Wealth should unlock its coffers for its encouragement; science and every mental acquirement should be liberally bestowed, when instruction is required, as it always has been, by the tillers of the earth; whose occupation in a great degree, secludes them from opportunities of gaining scientific knowledge, and a capacity for philosophic research. Commerce should yield to the support of agriculture, a share

of those profits whereof it is the source; and manufactures should bestow a willing tribute to the art on which their subsistence depends. Those who devote themselves to the learned professions, should render to it, both homage and contribution. Their usefulness, or gains, would be small indeed, among shepherds and hunters—and those were for the most part, the employments of man, before agriculture widely diffused its blessings, and mainly contributed, not only to the civilization, but to the happiness, wealth, subsistence and safety of our race. Those who minister at the *Altars*, and are our instructors and examples, in our most exalted concerns, are also bound to animate, instruct, and encourage the cultivators of the soil. Many of them, in other countries, have been highly meritorious, both in precept and example, on this subject. And they peculiarly know, that the exercise of this art, is venerable for its antiquity; was enjoined by a dispensation of Providence, and established by an ordinance of heaven.

Those who have a permanent residence in our towns and cities, should be more convinced, than they have hitherto been, of the obligations they owe to agriculture. Their daily subsistence, and their necessary comforts and even luxuries, depend, either directly or consequentially, on this first of arts. The better the style of husbandry, the more benefits they derive from it. It is no reasonable excuse for withholding their assistance, or encouragement, that they are not agriculturists. They possess, and should bestow, the means of promulgating encouragement and information to those who are engaged in the labors of the field.

On us, whose happy lot is cast in a free country, the extension and encouragement of agricultural improvement, is most impressively incumbent. Montesquieu has, with truth, observed, that "countries are not cultivated in proportion to their fertility, but to their liberty."

The Athenians, among the first of the Greeks who acquired a free government, and the polish of civilization, and science, were famed for their knowledge of agriculture. Xenophon, one of their distinguished citizens, and celebrated historians, many years ago remarked, that "Agriculture is the nursing mother of the arts. For, where it succeeds prosperously, there the arts thrive; but where the earth necessarily lies uncultivated, there the other arts are extinct."

In the early periods of the Roman Republic, when liberty was a substantial blessing, and not an empty sound, the highest praise that could be given to any citizen, was to say of him, "that he well cultivated his spot of ground." And the leading propensities of her greatest men, were to cast off their robes of state—lay aside their truncheons, and ensigns of power—to "cultivate their spots of ground."

Let it not be understood, that the encouragement and improvement required for agriculture, is intended for the mere personal emolument of the farmer. Those who take an incorrect or improper view of the subject, allege, that "farmers are doing well enough—and want no improvement." Every one acquainted with political economy, knows well, how extensively it adds to the general advantage of the community, when the same portion of labor is made to produce an increased number and quantity of supplies. And eminently distinct from all other employments is that of the husbandman, which brings into existence, by a kind of creation, additions to the public stock, drawn from the earth. Whereas most, if not all other occupations, are employed on materials pre-existing. *Farmers* are truly called, by the best writers on political economy, "the productive class," whilst all others are justly styled "the unproductive classes" of the community.

It is not necessary to cite opinions, or proofs, from great authorities, to show that whilst able and intelligent farmers enlarge the mass of property and wealth in the society in which they live,—they also increase the public security and happiness.

It will be seen at once by every one who passes through a country productively and neatly cultivated—that quietude, contentment, morals, and exemplary submission to law and good government, are strikingly conspicuous. But in a district inhabited by a negligent, and *ignorant* population, the picture is disgustingly, and even dangerously, reversed. So that it behoves every good citizen, for his own security, as well as from motives of patriotism and moral obligation, to assist in furnishing the means of warning the negligent, stimulating the indolent, and enlightening the ignorant husbandman.

Manure.

There is nothing of greater importance to the agriculturist, than a correct knowledge of those substances best adapted for producing an increase of crop. These are denominated *manures*, and consist of vegetable or animal matters. We are indebted to Sir H. Davy, in his Lectures on Agriculture, for the best explanation of the manner in which they accelerate vegetation. As this valuable work is only in the hands of a few, we have thought

it would be of advantage to the farming interest, to lay before them the following brief analysis of its contents.

The great object in the application of manure, should be to make it afford as much soluble matter as possible to the root of the plants; and that in a slow and gradual manner, so that it may be entirely consumed in forming the sap or organized parts of the plant. Mucilaginous, gelatinous, saccharine, oily and extractive fluids, and solution of carbonic acid in water, are substances that in their unchanged states contain almost all the principles necessary for the plants; but there are few cases in which they can be applied as manures in their pure forms; and vegetable manures, in general, contain a great excess of fibrous and insoluble matter, which must undergo chemical changes before they can become the food of plants. Whenever manures consist principally of matter soluble in water, their fermentation or putrefaction should be prevented as much as possible; and the only cases in which these processes can be useful, are when the manure consists principally of vegetable or animal fibre. The circumstances necessary for the putrefaction of animal substances are similar to those required for the fermentation of vegetable substances; a temperature above the freezing point, the presence of water, and the presence of oxygen, at least in the first stage of the process. To prevent manures from decomposing, they should be preserved dry, defended from the contact of air, and kept as cool as possible. All *green succulent plants* contain saccharine or mucilaginous matter, with woody fibre, and readily ferment. They cannot, therefore, if intended for manure, be used too soon after their death. When *green crops* are to be employed for enriching a soil, they should be ploughed in, if it be possible when in flower, or at the time the flower is beginning to appear, for it is at this period that they contain the largest quantity of easy soluble matter, and that their leaves are most active in forming nutritive matter. Green crops, pond weeds, the parings of hedges or ditches, or any kind of fresh vegetable matter, requires no preparation to fit them for manure. The decomposition slowly proceeds beneath the soil; the soluble matters are gradually dissolved, and the slight fermentation that goes on, checked by the want of a free communication of air, tends to render the woody fibre soluble without occasioning the rapid dissipation of elastic matter.

When old pastures are broken up and made arable, not only has the soil been enriched by the death and slow decay of the plants which have left soluble matters in the soil; by the leaves and roots of the grasses living at the time and occupying so large a part of the surface, afford saccharine, mucilaginous, and extractive matters, which become immediately the food of the crop, and the gradual decomposition give a supply for successive years. *Rape cake*, which is used with great success as a manure, contains a large quantity of mucilage, some albuminous matter, and a small quantity of oil. This manure should be used recent, and kept as dry as possible before it is applied. It forms an excellent dressing for turnep crops, and is most economically applied, being thrown into the soil at the same time with the seed. *Malt dust* consists chiefly of the infant radicle separated from the grain. We have not a correct analysis of this manure; but there is great reason to suppose it must contain saccharine matter, and this will account for its powerful effects. Like rape cake it should be used as dry as possible, and its fermentation prevented. *Linseed cake* is too valuable as a food for cattle to be much employed as a manure. The *water* in which *flax* and *hemp* are steeped for the purpose of obtaining the pure vegetable fibre, has considerable fertilizing powers. It appears to contain a substance analogous to albumen, and likewise much vegetable extractive matter. It purifies very readily. A certain degree of fermentation is absolutely necessary to obtain the flax and hemp in a proper state; the water to which they have been exposed should therefore be used as a manure as soon as the vegetable fibre is removed from it. *Sea weeds*, consisting of different fuci, algæ, and confervæ, are much used as a manure on the sea coast of Britain and Ireland. By digesting the common focus, which is the sea weed usually most abundant on the coast, in boiling water, it yielded about one-eighth of a gelatinous substance, which had characters similar to mucilage. This manure is transient in its effects, and does not last for more than a single crop, which is easily accounted for from the large quantity of water, or the elements of water it contains. It decays without producing heat when exposed to the atmosphere, and seems as it were to melt down and dissolve away.

Dry straw of wheat, oats, barley, beans and peas, and spoiled hay, or any other similar kind of dry vegetable matter is, in all cases, useful manure. In general, such substances are made to ferment before they are employed, though it may be doubted whether the practice should be indiscriminately adopted. There can be no doubt that the straw of different crops immediately ploughed into the ground affords nourishment to plants, but there is an objection to this method of using straw, from the difficulty of burying long straw, and from its rendering the husbandry foul. When the straw is made to ferment it becomes a

more manageable manure; but there is likewise on the whole a great loss of nutritive matter. More manure is perhaps supplied for a single crop; but the land is less improved than it would be, supposing the whole of the vegetable matter could be finely divided and mixed with the soil. Mere woody fibre seems to be the only vegetable matter that requires fermentation to render it nutritive to plants. Wood ashes imperfectly formed, that is, wood ashes containing much charcoal, are said to have been used with success as a manure. A part of their effects may be owing to the slow and gradual consumption of the charcoal, which seems capable, under other circumstances, than those of actual combustion, of absorbing oxygen so as to become carbonic acid.

Manures from animal substances, in general, require no chemical preparation to fit them for the soil. The great object of the farmer is to blend them with the earthy constituents in a proper state of division, and to prevent their too rapid decomposition. Fish forms a powerful manure in whatever state it is applied; but it cannot be ploughed in too fresh, though the quantity should be limited. It is easy to explain the operation of fish as a manure. The skin is principally gelatine; which, from its slight state of cohesion, is readily soluble in water: fat or oil is always found in fishes, either under the skin or in some of the viscera; and their fibrous matter contains all the essential elements of vegetable substances.

Bones are much used as a manure in the neighborhood of London. After being broken and boiled for grease, they are sold to the farmer. The more divided they are, the more powerful are their effects The expense of grinding them in a mill would probably be repaid by the increase of their fertilizing powers; and in the state of powder they might be used in the drill husbandry, and delivered with the seed in the same manner as rape cake. Bone dust, and bone shaving, the refuse of the turning manufacture, may be advantageously employed in the same way. Horn is a still more powerful manure than bone, as it contains a larger quantity of decomposable animal matter. Hair, woollen rags, and feathers are all analogous in composition, and principally consist of a substance similar to albumen, united to gelatine. The refuse of the different manufactures of skin and leather form very useful manures; such as the shavings of the currier, furriers' clippings, and the offals of the tan-yard, and of the glue maker. The gelatine contained in every kind of skin, is in a state fitted for its gradual solution or decomposition; and when buried in the soil, it lasts for a considerable time, and constantly affords a supply of nutritive matter to the plants in its neighborhood. Blood contains certain quantities of all the principles found in other animal substances, and is consequently a very good manure.—During the putrefaction of urine, the greatest part of the soluble animal matter that it contains is destroyed; it should consequently be used as fresh as possible; but if not mixed with solid matter, it should be diluted with water, as when pure it contains too large a quantity of animal matter to form a proper fluid nourishment for absorption by the roots of plants. Putrid urine abounds in ammoniacal salts; and though less active than fresh urine, is a very powerful manure.

Amongst excrementious solid substances used as manures, one of the most powerful is the *dung* of *birds* that feed on *animal food*, particularly the dung of sea birds. *Night soil*, it is well known is a very powerful manure, and very liable to decompose. It differs in its composition; but always abounds in substances composed of carbon, hydrogen, azote, and oxygen. A part of it is always soluble in water; and in whatever state it is used, whether recent or fermented, it supplies abundance of food to plants. The disagreeable smell of night soil may be destroyed by mixing it with quick-lime; and if exposed to the atmosphere in thin layers, strewed over with quick-lime in fine weather, it speedily dries, is easily pulverized, and in this state may be used in the same manner as rape cake, and delivered into the furrow with the seed. The Chinese, who have more practical knowledge of the use and application of manures than any other people existing, mix their night soil with one-third of its weight of a fat marl, make it into cakes, and dry it by exposure to the sun. These cakes, we are informed by the French missionaries, have no disagreeable smell, and form a common article of commerce of the empire. The earth, by its absorbent powers probably prevents, to a certain extent, the action of moisture upon the dung, and likewise defends it from the effects of air.

After night soil, *pigeons' dung* comes next in order as to fertilizing power. The dung of *domestic fowls* approaches very nearly in its nature to pigeons' dung, and is very liable to ferment. If the pure dung of cattle is to be used as manure, like the other species of dung which have been mentioned, there seems no reason why it should be made to ferment, except in the soil, or if suffered to ferment, it should be only in a very slight degree. The grass in the neighborhood of recently voided dung, is always coarse and dark green; some persons have attributed this to a noxious quality in unfermented dung; but it seems to be rather the result of an excess of food furnished to the plants.

A slight incipient fermentation is undoubtedly of use in the dunghill; for by means of it, a disposition is brought on in the woody fibre to decay and dissolve, when it is carried to the land, or ploughed into the soil; and woody fibre is always in great excess in the refuse of the farm. Too great a degree of fermentation is, however, very prejudicial to the composite manure in the dunghill; it is better that there should be no fermentation at all before the manure is used, than it should be carried too far. Independent of the general theoretical views unfavorable to this practice, founded upon the nature and composition of vegetable substances, there are many arguments and facts which show that it is prejudicial to the interests of the farmer. During the violent fermentation which is necessary for reducing farm yard manure to the state in which it is called *short muck*, not only a large quantity of fluid, but likewise of gaseous matter is lost; so much so, that the dung is reduced one-half, or two-thirds in weight; and the principal elastic matter disengaged, is carbonic acid with some ammonia; and both these, if retained by the moisture in the soil, as has been stated before, are capable of becoming an useful nourishment to plants. A great objection against slightly fermented dung is, that weeds spring up more luxuriantly where it is applied. If there are seed carried out in the dung, they certainly will germinate; but it is seldom that this can be the case to any extent; and if the land is not cleansed of weeds, any kind of manure, fermented or unfermented, will occasion their rapid growth. If slightly fermented farm yard dung is used as a top dressing for pastures, the long straws and unfermented vegetable matter remaining on the surface, should be removed as soon as the grass begins to rise vigorously, by raking, and carried back to the dunghill; in this case no manure will be lost, and the husbandry will be at once clean and economical.

In cases where farm yard dung cannot be immediately applied to crops, the destructive fermentation of it should be prevented as much as possible. The surface should be defended from the oxygen of the atmosphere; a compact marl, or a tenacious clay, offers the best protection against the air; and before the dung is covered over, or as it were, sealed up, it should be dried as much as possible. If the dung is found at any time to heat strongly, it should be turned over, and cooled by exposure to the air. When dung is to be preserved for any time, the situation in which it is kept is of importance. It should, if possible, be defended from the sun. To preserve it under sheds would be of great use; or to make the site of a dunghill on the north side of a wall. The floor on which the dung is heaped, should, if possible, be paved with flat stones; and there should be a little inclination from each side towards the centre, in which there should be drains connected with a small well, furnished with a pump, by which any fluid matter may be collected for the use of the land. It too often happens that a dense mucilaginous and extractive fluid is suffered to drain away from the dunghill, so as to be entirely lost to the farm.

Street and road dung, and the sweepings of houses may all be regarded as composite manures; the constitution of them is necessarily various, as they are derived from a number of different substances. These manures are usually applied in a proper manner, without being fermented. Soot, is a very powerful manure, and is well fitted to be used in the dry state, thrown into the ground with the seed, and requires no preparation.

The doctrine of the proper application of manures from organized substances, offers an illustration of an important part of the economy of nature, and of the happy order in which it is arranged. The death and decay of animal substances tend to resolve organized forms into chemical constituents; and the pernicous effluvia disengaged in the process, seems to point out the propriety of burying them in the soil, where they are fitted to become the food of vegetables. The fermentation and putrefaction of organized substances in the free atmosphere are noxious processes; beneath the surface of the ground they are salutary operations. In this case the food of plants is prepared where it can be used; and that which would offend the senses and injure the health, if exposed, is converted by gradual processes into forms of beauty and of usefulness; the fœtid gas is rendered a constituent of the aroma of the flower, and what might be poison, becomes nourishment to animals and to man.

Winter Food for Sheep.

Every farmer is aware, that one of the chief difficulties in the raising and management of sheep consists in preserving them through winter, without diseases or loss. Hence every fact or hint in relation to their winter management becomes of the first importance. It is indispensably necessary that sheep should be kept in good condition in order to prevent disease: and it is a secondary point, yet one to which much attention should

be paid to make use of the cheapest kinds of foods.

With regard to the quantity and nature of food, it should be such as to keep them in a strong healthy state, and rather full of flesh, yet not partaking too much of *fatness*. This good condition, even if maintained at considerably greater immediate cost, will be found by far the most profitable in the end; for independently of the constant danger of loss by death, when sheep are ill-kept, they shear much less wool, and the future progeny is much weaker, in consequence of such imperfect management.

One of the most necessary requisites to be observed is constant and regular feeding. Sudden changes from scanty to plentiful food, are highly detrimental, as is also the reverse. Perhaps the only exception to this remark, is the case of ewes rearing lambs, which require better feeding than in ordinary times.

The *quality* of the food is a thing of much consequence, and the *quantity* must be adapted to the quality. It is satisfactorily ascertained, that hay alone, is not adapted to keeping sheep in the best condition. Still less is it if they are not allowed a constant supply of water. But the intermixture of roots, and particularly mangel-wurtzel, is found to produce an excellent effect. A very successful manager of sheep, whenever he feeds any kind of roots, or grain, to them, first gives them a foddering of straw in order to fill them, as he does not consider the roots digest so well on an empty stomach. In order to be able to proportion the different kinds of roots, grain, &c. according to their nutritive qualities, it is necessary to know in what proportions those qualities exist in them respectively. The following table exhibits the results of the experiments of the distinguished agriculturist De Raumer, on the effects produced by an equal quantity of several substances in increasing the flesh, tallow, and wool of sheep.

		Increased the weight of the living animal.	Produced wool.	Produced tallow.
		lbs.	lbs.	lbs.
1000 lbs.	potatoes, raw with salt,	46½	6½	12½
do.	do. without salt,	44	6½	11½
do.	mangel-wurtzel, raw,	38½	5½	6½
do	wheat,	155	14	59½
do.	oats,	146	10	42½
do.	barley,	136	11½	60
do.	peas,	134	14½	41
do.	rye, with salt,	133	14	35
do	do. without salt,	90	12½	43
do.	meal, wet,	129	13¼	17¼
do.	buckwheat	120	10	33
do.	good hay,	58	7½	13
1000	hay with straw, without other fodder,	31	15½	6½

These results agree nearly with those of De Dombale, and with those of a number of other agriculturists.

It has also been ascertained by the experiments of some eminent agriculturists, that one lb. of oil cake is as nutritious as two pounds of hay. Two hundred lbs. of good sound straw of peas and vetches are equal to one hundred lbs. of hay. Three hundred lbs. of barley and oat straw are equal to a hundred lbs. of hay. Four hundred lbs. of wheat straw are equal to a hundred pounds of hay.

It will be perceived by the above table, that *wheat* produces the greatest increase in the flesh of the living animal, though but little greater than *oats;* that *peas, wheat, rye* and *hay mixed with straw*, produces the greatest increase of wool; and that *barley* and *wheat* causes the greatest increase of tallow. That as an average, grain generally gives about three times the increase in the flesh, that roots and hay do, when in equal weight; that grain produces about twice as much wool as is caused by an equal weight of roots, and several times the amount of tallow, that is produced either by roots or hay. But as an equal weight of mangel-wurtzel may be raised at the expense of less than one-tenth of what is required for the production of most kinds of grain, the vastly superior economy of its use as food for sheep for every thing except fattening, will be at once perceived.*

De Raumer found that sheep ate with avidity eight pounds per head of mangel-wurtzel a day, intermixed with straw; during which time they drank one quart of water, and remained in good and healthy condition.

That of raw sliced potatoes, they ate with good appetite at the rate of seven pounds per day, also with straw, and drank three pints of water in twenty-four hours. Also remained healthy.

That they ate two pounds of peas per head daily, drank from two to three quarts of water, and remained fine and healthy. It was necessary to soak the peas to prevent injury to their teeth.

That wheat produced nearly the same results as peas.

That they do not eat rye readily, and it appears not well adapted for their food.

That of oats and barley, they ate about two and a half pounds per head daily, with avidity, did extremely well on it, and drank about three quarts of water in twenty-four hours.

The buckwheat produced excellent effects upon them, which they ate with avidity.

And that of good hay they ate four and a

* The sugar beet is peculiarly adapted to the fattening of sheep—they thrive astonishingly on it.—*Ed. Farmers' Cabinet.*

half pounds daily, and drank from two and a half to three quarts of water.

As a large number of fine-wooled sheep have been introduced into the country within a few years, it is absolutely necessary, in order to render them most profitable, that they be well sheltered during winter. In those countries in Europe which are most famous for the growth of fine wool, strict attention is given to this subject, and sheep are not only sheltered in the night, but whenever the weather demands it during the day. It is said that on this depends in a great degree the fineness and quality of the wool. Sheds, at least, should always be provided for the most hardy breeds of sheep; much more so then, ought they be for the more tender, fine-wooled varieties. HENRY D. GROVE, Esq. of Hoosick, Rensselaer county, New York, who has been uncommonly successful in raising and wintering fine-wooled sheep, says that shelter against the inclemency of the weather, "is almost as necessary to the health and good condition of sheep, as food itself, and for this reason stables for that purpose are of great benefit. Not only do sheep do much better, but it is also a saving of fodder and manure. The latter is as important as the former; for manure properly applied, is money to the farmer; and it is well known that sheep manure is of the best kind. These stables ought to be so constructed, as to admit of a great quantity of hay being put over head; and for this reason I would recommend a side hill facing the south, and a dry spot around it, for their location. Each full grown sheep requires six square feet including racks. These ought to be constructed as to have a manger attached to each, for the purpose of feeding grain and roots, and to catch the hay the sheep draw through the racks. The stables ought to be eight feet high at least, nine feet is preferable, and sufficiently ventilated. It is also necessary to have windows for the purpose of light. The difference between wool grown in a dark and light stable, is really surprising. In a dark one wool does not get the brightness it has in a light one. Of this fact I have witnessed the most surprising proof. Over head the stable ought to be tight, that no fodder, chaff, &c. may fall into the wool, which reduces its value. The stables ought to be litered with staw from time to time, to keep the wool clean and add to the comfort and health of the animals."

We conclude these observations with the remarks, relative to the importance of water and succulent food to sheep during winter, of J. BARNEY, Esq. of Philadelphia, whose experience and skill on this subject are well known. To a gentleman who visited him, he showed from fifty ewes, upwards of sixty lambs, all lively and brisk, with a loss of perhaps three or four. The gentleman observed to him that he had his shed covered with dead lambs, and asked wherein the secret of breeding lay. He answered, "you stuff your sheep with dry food!" "Yes, as much good clover and hay as they will eat," was the reply. "You give them no water, but suffer them to go out in time of snow and eat it as they are disposed to do!"—"Yes." "Then there lies the secret. Your sheep fill themselves with hay; they get no water; and they have not a supply of gastric juice to promote the digestion of the hay in the stomach; they cannot raise it to chew the cud; they lose their appetite; are thrown into a fever; and cannot bring forth their young; or they bring forth a feeble, starved lamb, that falls off and dies on the first exposure to the cold and rain. On the contrary I take care to provide my sheep with good clear water in summer and winter. I feed them regularly with hay through the winter and give them ruta baga and mangel wurtzel every day. The ewes produce me *one hundred and twenty per cent. in lambs.* You cannot get along without ruta baga and mangel wurtzel."—*Gen. Farmer.*

Fattening Animals with Apples.

Comparative value of Apples to feed stock, and for sale, and their products, cider and brandy.

BY THOMAS P. HUNT.

During the two last summers and falls, my duties called me into the apple regions of the north. The following facts were obtained in reference to the subject of apple cider and brandy.

1. Cider drinkers are peculiarly subject to rheumatism, to inflamed eyelids, head-ache, bleeding at the nose, to sores and ulcers, difficult and tedious to cure, to affections of the stomach and bowels, and to premature trembling of the hand and head.

2. Cider drunkards are the most brutish and cruel of the unhappy tribe of inebriates.

3. An old orchard and a distillery are almost invariable indices of widows, orphans, poverty and drunkenness.

4. There is a great loss of money in making either cider or brandy. Good eating apples are worth on an average twenty-five cents a bushel. Eight bushels of apples make a barrel of cider, and twelve barrels of cider make one barrel of brandy. Brandy at fifty cents a gallon would give about fifteen cents per bushel for the apples. The loss is ten cents per bushel. This on an orchard of one hundred trees, in ten years, would be over one thousand dollars. No allowance is made for capital and labor connected with distilling. Take these into consideration, and the loss is much greater.

5. It costs no more to raise good apples, suitable for market, than to raise apples only suitable for distilling. Very often apples are worth one dollar per bushel, and then the loss is immense by t rning them into brandy. I am told that in Mobile apples sell now for ten dollars a barrel!

6. Engrafting and budding will change the character of an orchard, and more than compensate for the time and amount lost in producing the change, in ten years.

7. Apples make most excellent food for horses. Several physicians of extensive practice, in Connecticut and Massachusetts, feed their horses on apples and hay. I have never seen fatter horses, more sleek and spirited. The hair is much more lively, and requires less grooming than that of horses fed on grain. Mr. NORTON, of Farmington, Connecticut, has about the finest pair of horses I have seen. They are fed mainly on apples and hay. They travel very fast, and seem to have both wind and bottom. It is proper, however, to remark, that not as much grain is given to horses at the north as is customary at the south. One thing is worth noticing—horses fed on apples, do not eat as much hay as when they are fed on grain. Very sour raw apples injure the teeth of horses; but when boiled they do not. The rule of feeding is to commence with a small quantity, and gradually increase to a bushel a day for one horse.

8. Apples are most excellent food for beeves. The fattest beef I have seen was made so on sweet apples.

9. Nothing will fatten mutton quicker than apples. It is necessary, or best, to cut up the apples when fed to sheep.

10. Hogs care nothing for corn if they can get apples; if sweet, the apples may be given without boiling; if sour, they must be boiled. Mixed with corn meal the flesh is firmer.

11. Apples increase the quantity and quality of milk. At first there was a prejudice against giving apples to milch cows, because it was thought they diminished or dried up the milk. It is true that a gorge of apples or any other green food, will cause a fever and dry up the milk; but given in proper quantities, the effect is quite different.

12. Cattle and hogs are purchased and fattened on apples, and sold at a fine profit, when, to fatten them on corn would ensure a loss.

13. Sweet apples and good eating apples are to be preferred as food for horses, sheep and cows, also for hogs, although some recommend a mixture of sour and sweet for hogs.

If these remarks shall induce any one to test their correctness, by making a fair experiment, the object of my writing them will be fully answered.

Culture of Silk.

The culture and manufacture of silk, will, we think, be proscuted with considerable zeal in Pennsylvania. In view of the manufacture of the article, a large meeting was held lately in Philadelphia, and the establishment of a company was resolved on. The commissioners to receive subscriptions are some of the most eminent and wealthy persons of the city. They are authorized, when 1000 shares are subscribed, to purchase at once the machinery and establishment of Messrs. Upton and Jackson. The preamble to the report contains much valuable matter. In reference to the advantages and facility of the culture in this country, it says:

"The mulberry tree flourishes best in cultivated fields; and one of the most approved methods of obtaining the leaves for the food of the silk worm, is from mulberry hedges, which may be made, and securely used for the division of a farm into fields, instead of the usual fences, much more costly, and always exposed to injury and decay.

"The periods of the year in which the silk worm is fed, and when only the attention of the farmer and his family is required for their care and management, are those in which the usual labors of a farm are, for a great portion of those periods, not very great; and a large amount of the attention and industry which are required by silk worms when feeding, and making the cocoon, are most properly furnished by females, and by children from twelve to sixteen years of age. In the winter season, the family fireside of the farmer, now comparatively without employment, may be engaged in reeling the silk from the cocoons, a most agreeable and profitable occupation for that part of the year."

A large amount of free labor will be brought into employ, and the domestic silk trade of the north will one day rival that of cotton, rice and tobacco at the south.

In Pennsylvania, there are already many hundreds of acres planted with the mulberry. These plantations will be increased when it shall be known that a certain market exists for the cocoons, and for reeled silk, at a fair price. Small lots of cocoons are offered daily, and the committee entertain the belief that in 1837 one-fourth of the supply for a manufactory of a moderate extent, can be obtained from American cocoons. In three or four years, a manufactory with machinery and buildings requiring a capital of $100,000 may be supplied with American Silk.

Three hundred and ten good cocoons make one pound, and eight pounds of cocoons will give one pound of reeled silk. At that rate, the reeling being done at the manufactory, the cost of the silk will be about $3 per pound. When cocoons are produced in abun-

dance, the committee are disposed to believe that at twelve cents per pound, the raising of them will be as profitable as growing cotton at fifteen cents per pound.

Raw Silk.—At the first going off, our manufactories must depend chiefly on foreign raw silk.

The present prices of foreign raw silk, are, Bengal, $4,25 to $6 per pound; China, $5,50 to $8; Italian, $6,60 to $7 per pound.

The amount of manufactured silks imported into the United States, in the year ending on the 30th of Sept. 1835, was $17,497,000.

Machinery.—Silk is manufactured in France principally by adult labor, but the introduction of machinery in the manufacture of silk, which is the ratio of ninety per cent. in the hundred, reduces the cost of manufacture from fifty to eighty per cent. England, by the use of machinery, has become the successful rival of France in many articles of silk manufacture. Let the ingenuity of America be applied to silk machinery, as it has been to the machinery for making cotton and woollen goods, and its articles will be the same. The higher cost of adult labor in the United States, will thus be rendered comparatively unimportant.

The expenses of machinery are not heavy, as silk machinery is always light in its construction, and requires no great power to keep it in motion. A six horse power steam engine will move the machinery to manufacture two hundred pounds of raw silk per week: and a building of thirty feet in width, by two hundred and twenty-five feet in length, three stories high, will be sufficient for all the purposes of manufacturing, dying and packing that quantity of silk within its walls.

Plain Silks.—The estimate is made with confidence, that an establishment for the manufacture of silk into plain and ordinary articles, will cost no more than about one-eighth of a cotton factory, to turn out the same number of dollars' worth of work: and with equal if not greater profit.

While it is claimed, that all articles made from silk can be manufactured here, it is not considered desirable at present to undertake the making of any but plain staple goods; such as floss and sewing silks, twist and stuff for gentlemen's wear, vestings, plain ribbands, and gray silks for printing pocket handkerchiefs.

Floss and sewing silk made from Bengal silk, would cost—

Raw material, say	$5,25
Dying, manufacturing and waste,	1,50
Pound of 14 oz.	$6,75
These articles are now worth—	
Sewing silk	$10 to 11
Floss	11 to 12

Made from American cocoons, they would cost $4 per pound. It is estimated that grey plain silks, and white pongees, can be made as good as imported from Canton, by hand-looms, of Bengal silk, to a profit at the present prices of the article in the market. When made by power looms, and with American silk, they will yield a profit of not less than thirty per cent.

Sewing Silk.—The amount of Sewing Silk used in the United States is immense. To manufacture enough of this article to supply the demand, almost any amount of capital could be employed, with little cost of machinery. It has been ascertained that in the town of Hartford, Connecticut, the sales of sewing silk amount in one year to $35,000.

From J. Merrill's Address before the Union Ag. Society.

Benefits of Agricultural Societies.

The first great question in farming is this:—How shall we obtain the greatest returns for capital and labor? This secret can be completely unfolded only by repeated trials. But trials in one country will not always show the truth in another. This is the true secret of the Philosopher's stone; but we must take notice that the process is very different. Very good gold may be found in one country by a way, which in another will only uncover slate stones. It is for this reason that we cannot fully profit by the experience of European agriculturists; or even of those of our own country a little to the north or to the south of us. The question then arises, how far can we profit by their experience? How many of their practices dare we imitate? How many of their unsuccessful experiments may be useful here; and with what variations in the details? If one man must try all these experiments, he will probably not live to know and profit by the results of one half of them. The benefit of his actual improvements will be confined to his immediate neighborhood. Here is one very important point, in which societies like ours are useful; One has tried one thing, and another has tried another thing, till at last they are all tried.—The success or failure, the profit or loss,—together with a detail of the proceedings,—becomes known by our meetings, or by our publications. In all other things, union produces strength. Why should it fail here?—There is no reason to suppose it will fail here. It does not. The universal experience of all countries proves that Agricultural Societies have raised the standard of farming; and let me be excused for saying, have expanded and liberalized, and in every way improved the minds of the farmer. Consider, also, that agriculture is THE greater interest of the country; that whatever importance may be

attached to other pursuits, AGRICULTURE SUPPORTS ALL AND PAYS ALL. How important then that its modes of operation be the best. Let it further be borne in mind, that a society may promote many improvements, at a trifling expense to the members which would be beyond the means of an individual. But how can the usefulness of our society be increased? I answer, in the first place by obtaining more members—by giving our managers the command of greater funds, and enabling them by offering more and larger premiums, to excite a greater emulation among us. Premiums are in an especial manner necessary. A man may not be able to do a thing the first time without loss, which ever after he and all others may do with a profit. Our government, by its Patent laws, has provided for the remuneration of the labors of ingenious men, by the exclusive use of their inventions. We ask them to communicate their discoveries to the public, and take from us such a reward for their labors as we can afford to give them. But some may say, we have the best land and the best mode of farming now; the rest may copy after us. Indeed!—I should be sorry to shake any man's good opinion of himself too rudely; but I would just say to such, if such there be, that the best cultivated acre in Buffalo Valley, would in Holland be thought slovenly and unprofitable farming. I freely admit that there are good farmers in Buffalo Valley; but the one half of what was a plantation fifteen years ago, yields more profit now than the whole did then. The time is approaching when the half of this division of a plantation will be a farm. It must then be better cultivated than it is now. It is a mistake to think that any part of our country is cultivated in the best possible manner.

BOOK FARMING.

But will any one say this book farming is all nonsense? It answers no good purpose?—How is a true thing the worse for being printed? and how much easier is it to detect a printed lie, than one that goes from mouth to mouth, with INSTANT variations. You have the facts put down so that they cannot be altered. And if it depends upon one man telling his neighbor, and he another, the fourth man's story bears scarcely any resemblance to the first. It might, indeed, come back to the first man as a piece of great news. Carpenters, mill-wrights, and workers in metals, all study their books. Cloth dressers, dyers and distillers have their books. A farmer will hunt up an old newspaper to find somebody's new way of curing hams; but if he is asked to read in a book a way of increasing his crops, his answer is, pshaw?—don't I know all about it?

EXHAUSTED LAND.

I would submit, whether as a general practice, we do not farm too much land and whether the excess is not the greater the poorer the land is. I repeat, that the returns for labor and capital, the profit, is what we all seek. Is it not true, that much land is farmed without profit, and much more without the profit it ought to bring? In talking about profit, every body understands that the investment ought to be preserved safe. If a man gets the interest on his money for awhile, and loses the principal, he does not talk of profit. Should a man get ten per cent. a year for ten years, and then get no more, principal or interest, would he talk of profit? So I think no farmer, whatever his apparent income may be, ought to talk of profit, while he suffers his land to become worse. This ought not to be called farming. It is robbery of those who come after us. There is an old story of a man who had a goose that would lay golden eggs. She did not lay them fast enough to supply his wishes, and he killed the goose. He got one egg and the supply ceased. It is so with those improvident farmers, who push their land too hard. This principle is therefore at the bottom of all good farming, to wit, we must on no account, suffer our land to grow worse. If this principle is steadily adhered to, it will grow better. It is almost impossible so to adjust our labor as that our land shall not grow better or worse. What we take off must bear a proportion to what we put on the land. Does any one doubt the truth of all this? Is it sufficiently considered in our country? On the contrary, is there not a very large proportion of farms in our district which become annually more and more exhausted? Does this deserve to be called by the name of farming? Is this the course we should expect the owners of land to pursue? On the contrary, is it not the very course that squatters, those who sit down to skin other people's land, would be expected to pursue? Is it not true, that every man, who takes the strength out of land in a few crops, really does kill the goose that lays the golden eggs? Can any thing be more improvident? While a country is new this may not be so much thought of; but our country is no longer new, and this principle presses itself upon our attention as one of first rate importance. But why do men practice on the contrary principle? Partly from imitating bad examples, and partly from a habit of making most of to-day, and letting to-morrow take care of itself. It is one of the benefits we expect to derive from our society, that its members will set better examples, and make all ashamed to follow such old and injurious practices.

RECIPROCAL INTEREST OF THE FARMER AND MECHANIC.

There are many things which a farmer ought to raise, in order to prevent his land from growing worse, which will not bear to be carried to a foreign market. The whole attention of the farmer is turned to such things as he can sell. It is, therefore, the interest of the farmers that there should be a great many people around them who are not farmers, and who will buy and consume those things for which there is no foreign demand. The home market, besides taking many things the foreigner does not want, is also more steady than any foreign market. It is then very important to have the consumers among us; and it is for this reason we ask mechanics and manufacturers to join us and show what they can do. Farmers already can buy from their neighbors, and pay in truck, many articles for which formerly they must have sent to cities, and to foreign countries. Many here recollect when a man was not thought to be genteelly dressed without an imported hat on his head, and then it was said the imported hat was the cheaper according to its quality. Perhaps it might then have been so in money, (though not now,) but we should consider how many hats were paid for with potatoes and cabbages. Never one. The principle then is plain. The land will never be cultivated in the best manner till it shall be the interest of the farmer to raise all those things which help to keep his land from growing worse. The farmer can never be encouraged to do this so long as his products must seek a distant market, for many of these articles will not bear the expense of transportation. It is said that the improved farming of England was encouraged by the introduction of the culture of turneps from the continent more than by any other one thing,—the manufacturers bought the wool and the meat of the animals that were fed on the turneps. This is one of the hundred ways in which this thing works in a circle. The greater the variety of employments, the cheaper each sells his products, and yet the more profit each enjoys.

NEWSPAPERS.

But the number of experiments would not need to be so numerous, if our farmers read agricultural newspapers and other publications on the subject more generally; or what would be better, if they would require our own newspapers to give more of that information, and less of violent party politics. Our printers would do it if it was known to be more pleasing to the taste of our farmers.—Where is the man who in cool blood would not rather have his children read papers that give valuable practical information, than those libellous personal denunciations which every election is so sure to produce! It is, in fact, worth while to consider, whether the times do not require temperance in newspapers as well as in some other inflammable and inflammatory articles. On this, as on other subjects, the united opinion and action of our agricultural societies might do much.

CONCLUSION.

In conclusion, I have only to say to you, gentlemen of the society,—*persevere*. Our cause is a good one, and while it promises many benefits, it does not threaten one evil to our country. Let every one try to improve.

In the moral world, nobody is so great a villian, that he does not think somebody worse. So in agriculture—no farmer is so slovenly and improvident that he cannot point out others, in his opinion at least, worse than he. This is not the kind of comparison we ought to draw. He that would go high, must look higher. Let every one see wherein his neighbor excels him, and try to overtake him; and not rest contented when he has found a lazier man than himself in the neighborhood. Let us never forget, that after all our strivings, there is One that giveth the rain and the sunshine—the seed time and the harvest; and that we are bound to ask Him and to thank Him for all his blessings.

Garden Seeds.

As success in gardening depends much on good seeds, a few hints on raising, gathering and preserving them, may be of importance to the young and inexperienced gardener.—Plants intended for seed should be carefully cultivated during their whole existence, and especially while their seeds are ripening.—They should also be located in such a manner as that those of the same species cannot intermix and produce deteriorated varieties. To prevent mixing, they must be set at considerable distances apart, as even Indian corn has been known to mix at the distance of three hundred yards. It is utterly impossible to preserve varieties of cucumbers, melons, squashes pumpkins, &c. in their purity, if they are permitted to flower and ripen their seeds in the same garden—the seeds of two varieties of the same species of plants, should not, therefore, be attempted to be raised in the same garden at the same time. It is this disposition to mix and degenerate that renders it difficult for seedsmen to raise a complete assortment of seeds on their own grounds, unless they are very extensive.

The most luxuriant and perfect plants, and such as arrive at maturity the earliest in the season, should be selected for seed. They should be permitted to remain in the garden

until the seed is perfectly ripe; and should then be gathered and cleaned in clear weather. If any moisture remains, they should be exposed to the rays of the sun until they are perfectly dry and then be put up in bags or boxes and secured from the depredations of rats, mice and insects, and the action of severe cold. As a general rule, new seed is to be preferred to old, on account of its germinating quicker and producing more v gorous growth; but good seeds, gathered and preserved in the foregoing manner, will retain their vitality as follows:

	YEARS.		YEARS.
Asparagus	4	Majoram	4
Balm	2	Melon	8 or 10
Basil	2 or 3	Mustard	3 or 4
Beans	1 or 2	Nasturtium	2 or 3
Beets	8 or 10	Onion	3
Borage	2	Parsley	5 or 6
Cabbage	6 or 8	Parsnep	1
Carrot	1 or 2	Pea	2 or 3
Celery	6 or 8	Pumpkin	8 or 10
Corn	2 or 3	Pepper	5 or 6
Cress	2	Raddish	6 or 8
Cucumber	8 or 10	Rue	3
Caraway	4	Ruta Baga	4
Fennel	5	Salsafy	2
Garlic	3	Savory	3 or 4
Leek	3 or 4	Spinage	3 or 4
Lettuce	3 or 4	Squash	8 or 10
Mangel Wurtzel	8 or 10	Turnep	3 or 4

Some gardeners prefer old seeds of cucumbers, melons, squashes, &c. &c., to new, on account of their running less to vines and producing larger crops of fruit; but on this point we cannot speak experimentally. The vitality of seeds is easily tested, and they ought never to be sown, in any considerable quantity without it. When divested of their covering, such as will germinate, will sink in lukewarm water, while such as have lost their vitality will float on the surface.

RETIRING FROM BUSINESS.

It is very common to hear persons who are engaged in active concerns of life, express a desire to become speedily rich, so that they may retire from business. This appears to be almost universally the object of the business of man's toil. But we venture to say that in no respect were people ever more generally deluded than in this. They expect to find nothing but happiness upon leaving what they have been accustomed to regard as the harassing cares of business—they actually find nothing but misery. In nine cases out of ten the man who has retired from business and laid aside his active habits, finds cause daily to regret the step he has taken, and to wish himself back again. Happiness is not to be found in idleness, but in a faithful discharge of the active duties of life. Man was not intended as an idle being, and it was a wise ordinance that by the sweat of his brow he should eat bread. The necessity of activity and labor imposed upon the human race tends to the promotion of virtue and of substantial enjoyment. It is a true remark of Miss Sedgwick that "one cannot be very unhappy while there is enough to do."

GOOD ADVICE TO A FARMER.

"Many years ago," said a quaker friend who told us the anecdote, "many years ago, a brother of the celebrated BENJAMIN WEST, who had been a cooper in this city, a man of sterling sense and integrity, purchased a farm some miles out of the city which had been suffered to be overrun with briars and bushes. He was for a short time considered by his neighbor farmers as very far from being as wise as SOLOMON or even as themselves, but in a few years his was the best and most productive farm within fifty miles around him; his fame as a farmer spread far and wide. One day a man came to him who was desirous of improving his farm, and asked him how he should do it. Go home, said Mr. West, and make five or ten acres as rich as thee wants, and come to me and I will tell thee what to do next. But, said the farmer, I have not manure enough to do that. Very well, then, go and prepare thee three acres, two acres, or one acre in the same way, but what thee undertakes do well. The farmer, said our friend, perfectly comprehended the advice, and what is unusual practised upon and benefited by it, leaving at his death one of the best farms in the country." Go and do likewise.—*Phila. Herald.*

BUCKWHEAT STRAW.

A correspondent who signs himself "a young farmer," asks us whether any use can be made of his Buckwheat straw? Our reply is, that it is better for milch cows than the best timothy hay—that his cows will eat it with equal avidity—that if it has not been exposed too long to the vicissitudes of the weather it will prove equally nutritious to them—that so far as the secretion of milk is concerned it is infinitely preferable to any hay or fodder within our knowledge, and that when cut and boiled, or steamed, it makes a most acceptable slop for the cows. We will say further, that the "old plan" of throwing this wholesome and nutritious provender upon the dung heap, or the barn yard to be trampled under foot, should be abandoned and that henceforth it should be permitted to assume its proper rank among the choicest hay for neat cattle.—*Farmer and Gardener.*

Cultivator, or Horse-Hoe.

In the eighth number of the Farmers' Cabinet, we gave a brief account of the Cultivator, an implement now coming into general use, and recommended in the highest terms by all persons who have adopted it in their practice. In the article referred to, which we copied from the Cultivator, it was stated that Mr. BEMENT, an intelligent farmer at Albany, was engaged in making some additional improvements, by which the manufacture of these implements would be simplified, and rendered more generally useful in the culture of roots. From the same source we copy the following statement:

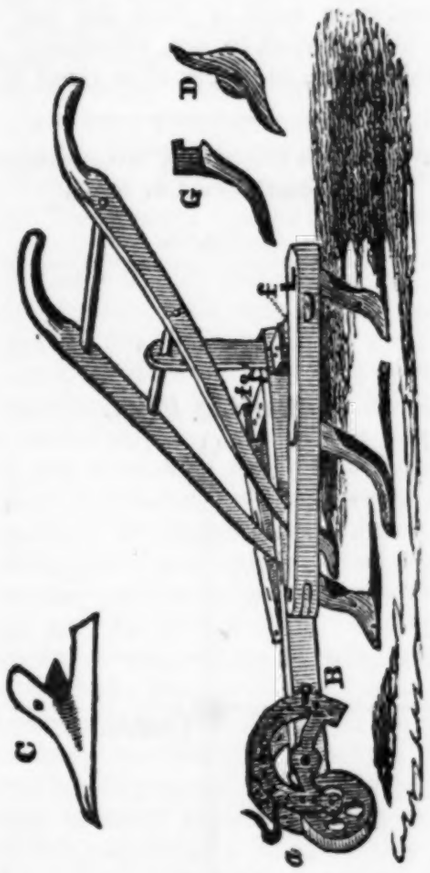


Fig. 64.

Above is a figure or drawing of *Bement's Cultivator, or Horse-Hoe.* It has been much improved of late in manufacture as well as by the addition of new fashioned points or phares, which render it a very useful implement on the farm, and will be found particularly useful in the beet culture, which is now very justly engaging the attention of some of our enterprising agriculturists. With the aid of the Horse-Hoe and Drill Barrow, the cultivation of the beet may be made as easy as that of corn or potatoes.

The Horse-Hoe is useful for stirring the soil in the intervals between rowed crops, especially corn, potatoes, turneps, beets and beans.

Respecting the construction of Horse-Hoes, it may be observed, that soils of different textures will require shares of different forms, according to the hardness or tenacity. The number of hoes in hard soils require to be diminished; in a hard clay soil, one of the triangular hoes in the centre, (C,) and four of the coulters in the wings, will often be all that can be made to enter the soil.

In using this implement, the operator should always consider whether he will produce more benefit by merely cutting over or rooting up the weeds, or by stirring the soil; because the hoe suited for the one purpose is by no means well adapted for the others. In the former case, flat or triangular shares are to be used; in the latter, coulters are much more efficient, as they will enter the soil and stir it to considerable depth, thus greatly benefiting the plants by admitting air, heat, dews and rain, and by rendering it more permeable by the roots.

It should be introduced between the rows or drills as soon as the plants appear above ground, and the operation should be repeated at intervals, till the crop is thoroughly cleaned.

The clevis on the point of the beam is so constructed, that the draught may be regulated so as to keep the wheel firm on the ground, thereby steadying the machine, and the depth is regulated by the wheel, and may be varied from two to six inches. The triangular hoes (C,) cut the bottom of the space between the drills completely, and should circumstances require, the hoes may be replaced by the coulters, which will open and pulverize the soil as well as rake out the weeds. The wings expand so that it may be regulated to any required width, from sixteen to thirty inches.

When the earth is required to be taken from the plants, as is the case with ruta baga when quite small, the half shares (D,) are to be used, turning the mould boards to the centre, and the double ones substituted when the earth is to be replaced.

The coulters (G,) are useful for scarifying old meadows that have become turf-bound. The double mould board shares are also useful for covering peas and oats instead of the plough or harrow.

They are for sale at the Agricultural Warehouse of Wm. Thorburn, 317 North Market street, Albany. Price $15, including three triangular, three double mould board, three half mould board shares, and five coulters, and carefully packed in a box for transportation.

The following is the first part of a communication, received, we think, from Lawrenceville, N. J. The latter part was so damaged after it came into our hands as to

render it unintelligible. If we remember right, however, the substance of it is contained in the part we now publish. Having lost the name of the writer, we are unable to comply with his request. We hope, however, to hear from him again.

Beet Root *versus* Malt.

"It is to vegetable productions that commerce owes its support; they form our ships' cordage and sails; and it is for vegetable varieties principally that we cross the seas, and explore every clime from the equator to the poles."—Phillips.

To the Editor of the Farmers' Cabinet.

Sir—It is probable the following communication will find an appropriate place in your interesting columns, and if it awakens among the farmers, to whom it is principally addressed, a sense of the importance of private brewing, the object of the writer will be attained.

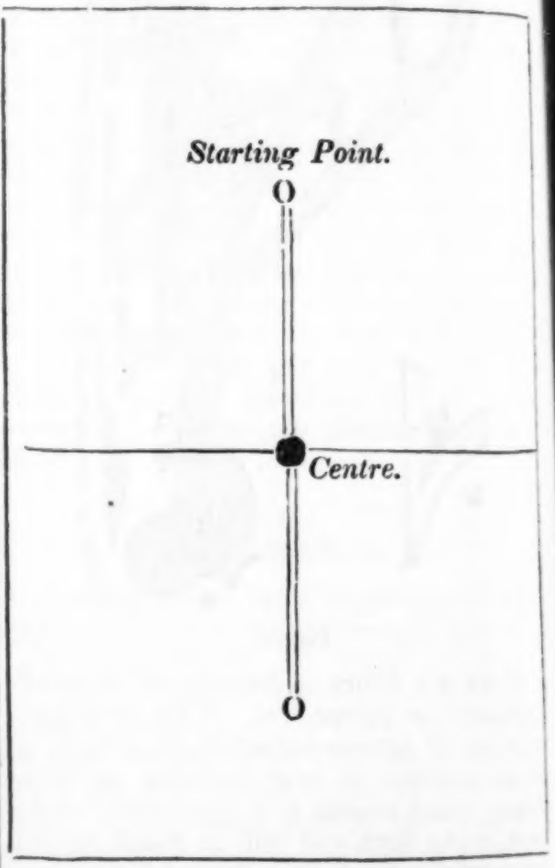
The practicability of brewing ale from the Beet Root, I first noticed some years ago, in the Mechanics' Magazine, a British periodical, consequently lay no claim to originality in thus bringing the important subject before the public. The inestimable advantages attending the cultivation of this prolific root for various purposes are such, that no one unacquainted with its nutritive qualities, can duly appreciate. The time will arrive, however, when the Beet Root will triumph in spite of prejudice, and of a general ignorance in the proper mode of culture, management and preservation.

That ale can be made from the beet root, numbers within the sphere of my former acquaintance bear ample testimony, and ale too of a wholesome and delightful quality, and at the moderate price of six cents per gallon. My first brewing consisted of one hundred and fifty pounds of the roots, which had been well selected, washed and cut into thin slices. They were then boiled, with no more than a sufficiency of water to cover them, an hour and a half. The whole contents of the boiler were then put into a wash-tub with a false bottom, and the wort allowed to drain off, pressing the pulp in the wash-tub as much as possible, the last drop having a tenfold proportion of sweetness to the first. There will now be about fifteen gallons of wort of uncommon sweetness, to which must be added immediately, half a pound of the best hops, and reboiled an hour and a half. The result will be ten or eleven gallons of strong liquor, which must be strained through a seive in the usual way, reserving a good handfull of the spent hops to be added to the ale when put into the cask, and after the fermentation has ceased. When the liquor has cooled down to 65 or 70 degrees of Fahrenheit, (and the sooner it is cooled the better) add half a pound of good fresh yeast, and proceed afterwards as with malt liquors. The addition of a shilling loaf, sliced and toasted brown, and put into the barrel previous to making up, is of great service. This gives mucilage in a considerable degree, and which is perceivable in malt liquors only, producing that agreeable fulness to the palate.

Every article that enlarges the catalogue of human food augments the comforts of existence. How many families in the possession of gardens, often abounding in weeds, who, with less trouble than is necessary to clear them away, might have an abundance of this salutary vegetable for the purpose of domestic brewing! Domestic brewing, whether it proceed from malt or from the beet root, I care little, I wish to see established in the United States, as practiced in Great Britian.

Plan of John Welsh, of Swedesborough, Gloucester Co. N. J.

Fig. 65.



Plan of ploughing so as to prevent deep ditches, also to prevent the earth being packed by the team.

This plan has been tried and found to possess the advantage of preventing the ground at the ends being packed by the feet of the team: also to prevent deep ditches. The plan is to exactly reverse the usual order of ploughing—to commence at the centre and plough out.

Important to Farmers.

At a late meeting of the Hartford County Temperance Society, the following highly interesting facts were stated in the Report. The value of apples is just beginning to be known. The knowledge of their value is one of the excellent discoveries of the Temperance Reformation, and when it shall have been fully circulated and adopted by the farmers of our country, the orchard will be regarded as one of the most profitable as well as convenient appendages of the farm.—*Franklin Mercury.*

Value of Apples to the Farmer.

JOEL CLARK, Esq. of East Granby, in 1835, for the first time, instituted an experiment for testing the value of apples as food for horses and for fattening swine and beeves. At this time he was altogether incredulous upon the subject. The result was conclusive proof to his own mind of their being decidedly beneficial. The present year he has pursued the same experiment with precisely the same results. Last year he slaughtered two hogs which weighed a little over 400 lbs. each.—This year he has slaughtered the same number, a smaller sized animal, one weighing 348, the other 328. They were fed in both cases exclusively on raw apples, sour and sweet, promiscuously, until a short period before being butchered, and the pork is of the first quality. In August last he discontinued the milking of a cow which he had designed for fattening and turned her into the summer pasture with his young stock. On the first of October he removed her to rowen feed and commenced the feeding with apples. The most she would have commanded in market at this time, was thirteen to fourteen dollars. He kept her two weeks, giving her night and morning, as many apples as she would eat, which was just about a bushel a day. The thrift was such as to excite the particular notice of himself and hired man, and equal to that of any animal on any kind of food. At the expiration of the seven weeks, he sold her, and to be still better able to know the results of his experiment, he rode four miles to see her slaughtered. A better beef is seldom found than this proved to be. He received $28,30 for her, that is, $14,30 gain for seven weeks, or allowing $2,30 for the pasturing, about two shillings a week, he received $12,00 for the fifty bushels of apples, or at the rate of twenty-four cents per bushel. Now these fifty bushels of apples converted into cider would yield six barrels. These, in 1835, delivered at the distillery, would have commanded from forty-two to fifty cents per barrel, say $3,00 for the whole. In 1836, the same delivered at the distillery would command from seventy-five to eighty cents, say however, $6 for the whole.—According to the last computation then, there is a gain of $6 in favor of feeding with apples. He fed at the same time and in the same manner, a two year old heifer, and with results more favorable rather than less. Though not the largest of his herd, she weighed on being slaughtered 573 lbs. What farmer who understands at all the article of profit and loss in the use of the products of his farm, and consults his pecuniary interests simply, will be surprised to know that this gentleman has already commenced operations for constructing a cellar under his barn for the purpose of preserving his apples for feeding his stock during winter.

His orchards have produced one hundred and fifty barrels of cider and even more in a year which he has sold to the distiller, for fifty cents per barrel, because he knew of no more profitable manner of disposing of it. Now the quantity of apples necessary to make 150 barrels of cider upon the above estimate would yield according to the results of his experiment in feeding this year $300, making a difference of $225, no trifle, surely, in the products of one man's orchard, or if you value the cider at one dollar per barrel, the difference is $150, a tax which no prudent farmer ought to pay for the purpose of enriching the distiller of cider-brandy. But then to what can the farmer feed out all the products of his orchard? He will not wish surely to make so much beef and pork as to consume the whole amount. Let him feed them to his horses and cows and young stock. By all the writers on the subject of raising stock, it is contended that farmers greatly mistake their interests by stinting their young cattle, or confining them to such fodder during the winter as will barely sustain life. Let the young stock be treated to a moderate quantity of apples every day and kept in good heart and thrift, and the farmer will in the end realize his profit. In view of these facts, good economy does not urge the expediency of prostrating apple trees that are thrifty and productive of good fruit. Some trees there are which are literally cumberers of the ground. Let such be removed. But let all others be protected, and when circumstances will permit, let their fruit be improved by engrafting.

GLASS WARE.—It probably is not generally known, that glass ware may be tempered so as not to be liable to crack when filled with hot water, by merely boiling it in water, which should be cold when the glass is put into it, and then leaving it to cool gradually in the water. If the ware is to be exposed to a greater heat than that of boiling water, it should be tempered in oil.

Change of Food.

There seems to be a natural disposition in man, in the brute, and in the vegetable, to a change or alteration of food, alike conducive to the gratification of the appetite and the promotion of health.

This propensity in man is apparent to all. That a change is conducive to health, is evidenced by the fact that persons long confined to the same diet are more liable to disease than those who indulge in a variety. This is seen in long voyages, and in the army, where men subsist daily upon the same rations. If there is any exception to the rule, it is where the food is of the simplest kind, as the brose of the Scotch, the potatoes of the Irish, or the rice of the people of the tropics.

The general principle being admitted, or that even a change is not prejudicial to health, how important is it to our comfort, and economical in regard to expense, to multiply around us the fruits, vegetables, &c., which are the subjects of garden and field culture, and to select for this purpose the best varieties; and these are undergoing constant increase and improvement by means of culture and fecundation. Every season brings to our notice new species and new varieties, particularly in garden productions, favorable alike to health and to innocent gratification. The tomato and the rhubarb, both of recent introduction to our gardens, are of this character.

"By means of new varieties," says Bishop, "the produce of our gardens and fields are not only increased in a ten fold degree, but the quality of the produce is increased in a still greater proportion, and the difference between varieties that have sprung from the same species, fit them for different purposes, different soils, situations and climates. Thus in edible plants and fruits, we are supplied with an agreeable change throughout the year, from a difference of varieties that have sprung from the same species. Nothing is more obvious upon comparing original species with their varieties produced by culture, than that we, by means of the latter, enjoy a vegetable food far preferable to that of our forefathers; and as it is probably beyond the power of man, of cultivation or of time, to determine the degree of excellence attainable by varieties over the species whence they have sprung, and as that degree is unknown, are we justified in regarding it as progressive, and to consider the production of a good variety as the sign or harbinger of a better."

The disposition of animals to change their food, is evidenced by their habits and their disposition to pluck a variety of herbage, and to select that which is new to them. That a change is conducive, and indeed indispensable to health, has been proved by repeated experiments. Dogs and other animals, who have been confined to one kind of food, although of a kind naturally suited to their wants, have sickened and died. Sinclair cites a case of the effects of two adjoining pastures, one containing only white clover, and a patch of orchard grass—and the other stocked with five or six kinds of grass, and among them the orchard grass. In the first, the sheep resorted for a change, to the orchard grass, which they ate to the stump, culms and all; and some time after this was exhausted, many of the sheep became affected with the red water, and some of them died. In the adjoining pasture, in which there were six or eight species of grass, the sheep were wholly exempt from disease. But Sinclair demonstrated by accurate experiment, that a multiplicity of grasses sown together, not only contribute to the health and thrift of the animals depastured upon it, but that the product was greater, considerably, and exceeded that of the best pasture grounds. From these facts Sinclair and others argue, that we ought, in stocking down our grounds, to avail ourselves of all the grasses that we can procure, and that our soil will nourish. Groom observes, that out of more than two hundred grasses suitable to England, only one genus, the rye grass, has as yet received general culture; and that of sixty species of clover, only three or four have received attention. The presumption is, that many indigenous grasses which have hitherto escaped the notice of our farmers, would be improved by culture to as great an extent as the wild carrot, parsnep, cabbage, potato, apple, plum, peach, &c.

That the vegetable is improved by a change of food, is not only evidenced by the natural law of alternation, witnessed in forests and in cultivated grounds, but by the improvement which takes place from a change of seed. It has become a well established principle that a change of seeds from one soil and from one district to another, is highly advantageous. We have had this particularly verified in the potato, where foreign seed, of like variety and size as that raised on our farm, produced in the same field one-third the largest crop. Growing from the same seed, without change, seems to be a sort of vegetable breeding in-and-in. The progeny seems to deteriorate in both cases, and ultimately to become worthless. Upon these principles we should not only recommend an alternation of crops, but a frequent change of seed, to insure a healthy vegetable constitution and vigorous growth.

Whoever acquires his learning at the expense of his morality, is the worse for his education.